

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-3 (canceled)

Claim 4 (currently amended): An apparatus for controlling the delivery of vapor to a process tool, said apparatus comprising:

a bubbler ~~which contains~~ defining an interior for containing a quantity of a reagent and which is in fluid communication with a process tool;

means for introducing a carrier gas into said bubbler interior to cause vapor of said reagent to become entrained in said carrier gas and to flow out of said bubbler to a process tool; and

control means for maintaining sufficient liquid within said bubbler, the control means comprising a liquid level tube extending through a bottom of the bubbler into the bubbler interior such that a top of the liquid level tube is positioned at a predetermined height to achieve during refilling of the bubbler a head pressure in the bubbler interior such that the top of the liquid level tube and an upper surface of the reagent substantially coincide.

Claim 5 (original): The apparatus of claim 4, wherein said control means causes the concentration level of the delivered vapor to be substantially constant.

Claim 6 (original): The apparatus of claim 4, further comprising a heating means for increasing the temperature of said reagent in said bubbler.

Claim 7 (original): The apparatus of claim 4, which also includes a reservoir for holding a quantity of said reagent and a conduit which includes a valve and which provides liquid communication between said reservoir and said bubbler, and wherein said control means includes means for providing a gaseous head pressure

within said bubbler.

Claim 8 (original): The apparatus of claim 7, wherein levels of said reagent in said bubbler are set between limits which define a sufficient quantity of reagent are established, and wherein when said reagent levels rise or drop to said predetermined levels, said valve is closed or opened automatically to discontinue or to begin filling said bubbler until the head pressure with said bubbler equilibrates with the pressure of said conduit.

Claim 9 (currently amended): An apparatus for providing chemically reactive vapor to a processing tool, comprising:

a bubbler for containment of a reagent that is in communication with a reservoir containing said reagent, a carrier gas and a processing tool, wherein said bubbler comprises a carrier gas outlet, a liquid level set tube, a vapor extraction tube, and a drain placed in a low point of the bubbler floor, wherein the top of said liquid level set tube is positioned at a predetermined height to achieve a specific head pressure within said bubbler resulting in the surface of said reagent to be level with the top of said liquid level set tube and wherein said ~~u-shaped~~ vapor extraction tube ~~having~~ has a first end that is substantially u-shaped and that is positioned above and horizontal to said reagent surface and ~~[[said]]~~ a second end in communication with said processing tool.

Claim 10 (currently amended): ~~[[An]]~~ The apparatus of claim 9, wherein said liquid level set tube of said bubbler is in fluid communication with a reservoir containing a chemical reagent, the bubbler further comprising a gas carrier intake conduit connected to the chemical reagent reservoir and having a portion extending through the bubbler floor to a point a distance above the bubbler floor.

Claim 11 (new): The apparatus of claim 9, wherein the liquid level set tube is selectively positionable to adjust the predetermined height of the top of said liquid level set tube in the bubbler.

Claim 12 (new): The apparatus of claim 4, further comprising means for extracting vapor from the bubbler interior, the vapor extracting means comprising a tube with a U-shaped portion with an opening for receiving vapor that is positioned in the bubbler interior above the top of the liquid level tube.

Claim 13 (new): The apparatus of claim 4, further comprising a reagent fill and drain line connected to the bottom of the bubbler such that an opening in the reagent fill and drain line does not protrude above a surface of the bottom of the bubbler.

Claim 14 (new): The apparatus of claim 13, further comprising a source of the reagent, wherein the liquid level tube and the reagent fill and drain line are selectively connected to the source of the reagent, wherein the apparatus further comprises means for, during a first stage of the refilling of the bubbler, connecting the reagent source to the reagent fill and drain line during a first stage and disconnecting the liquid level tube from the reagent source and for, during a second stage of the refilling of the bubbler, connecting the liquid level tube from the reagent source and disconnecting the reagent fill and drain line from the reagent source.

Claim 15 (new): A bubbler for providing chemically reactive vapor to a processing tool, comprising:

- a vessel for containing a reagent and a carrier gas, the vessel comprising a side wall, a bottom, and a top, wherein an inner surface of the side wall, the bottom, and the top define an interior space of the vessel;

- a carrier gas outlet extending into the interior space of the vessel;

- a vapor extraction tube extending into the interior space of the vessel;

a reagent fill and drain line with an opening in the bottom of the vessel; and
a liquid level tube passing through the bottom of the vessel and extending from the bottom of the vessel into the interior space of the vessel, wherein the liquid level tube has an end positioned at a predetermined distance from the inner surface of the bottom to achieve a specific head pressure within interior space of the vessel resulting in a surface of the reagent contained in the vessel to be level with the opening of said liquid level tube.

Claim 16 (new): The bubbler of claim 15, wherein said vapor extraction tube extends through the bottom of the vessel and comprises a substantially U-shaped end with an opening for receiving vapor facing the bottom of the vessel, the vapor extraction tube being positioned with the opening of the U-shaped end above the end of the liquid level tube.

Claim 17 (new): The bubbler of claim 15, wherein the liquid level set tube is selectively positionable to adjust the predetermined height of the end of said liquid level set tube in the interior space relative to the inner surface of the bottom of the vessel.

Claim 18 (new): The bubbler of claim 15, wherein the liquid level tube and the reagent fill and drain line are selectively connected to a source of the reagent, wherein the bubbler further comprises means for, during a first stage of the refilling of the bubbler, connecting the reagent source to the reagent fill and drain line during a first stage and disconnecting the liquid level tube from the reagent source and for, during a second stage of the refilling of the bubbler, connecting the liquid level tube from the reagent source and disconnecting the reagent fill and drain line from the reagent source.